

SEQUENCE LISTING

(1) GENERAL\ INFORMATION:

- (i) APPLICANT: Weiner, Amy J. Houghton, Michael
- (ii) TITLE OF INVENTION: Conserved Motif of Hepatitis C Virus E2 NS1 Region
- (iii) NUMBER OF SEQUENCES: 134
 - (iv) CORRESPONDENCE ADDRESS:
 - (A) ADDRASSEE: Chiron Corporation
 - (B) STREET: 4560 Horton Street (C) CITY: Emeryville

 - (D) STATE: CA
 - (E) COUNTRY ! USA
 - (F) ZIP: 946 8-2916
 - (v) COMPUTER READABLE FORM:
 - (A) MEDIUM TYPE: Floppy disk
 - (B) COMPUTER: IAM PC compatible
 - (C) OPERATING SYSTEM: PC-DOS/MS-DOS
 - (D) SOFTWARE: PatentIn Release #1.0, Version #1.25
 - (vi) CURRENT APPLICATION DATA:
 - (A) APPLICATION NUMBER: US 08/823,980
 - (B) FILING DATE: 2\$-MARCH-1997
 - (C) CLASSIFICATION
- (viii) ATTORNEY/AGENT INFORMATION:

 - (A) NAME: Rosen, Mark J.
 (B) REGISTRATION NUMBER: 39,822
 (C) REFERENCE DOCKET NUMBER: CHIR-0108
 - (ix) TELECOMMUNICATION INFORMATION:
 - (A) TELEPHONE: 215-564-6525
 - (B) TELEFAX: 215-568-3439
- (2) INFORMATION FOR SEQ ID NO:1:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 6 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide

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(ix) FEATURE:
     (A) NAME/KEY: Xaa
      (B) LOCATION: 1
      (D) OTHER INFORMATION: /label= variable
             /note= "Represents Ala, Arg, Asp, Gly, Lys, Ser,
             or Thr"
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(ix) FEATURE:

(A) NAME/KEY: Xaa

(B) LOCATION: 2

(D) OTHER INFORMATION: /label= variable /note= "Represents Ile, Leu, Met, Phe or Trp"

(ix) FEATURE:

(A) NAME/KEY: Xaa

(B) LOCATION: 3

(D) OTHER INFORMATION: /label= variable /note= "Represents Leu or Phe"

(ix) FEATURE:

(A) NAME/KEY: Xaa

(B) LOCATION: 6

(D) OTHER INFORMATION: /label= variable /note= "Represents Ala or Gly"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

Xaa Xaa Xaa Xaa Xaa

(2) INFORMATION FOR SEQ ID NO:2:

(i) SEQUENCE CHARACTERISTICS:

 (\tilde{A}) LENGTH: 32 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

(A) NAME/KEY: Xaa

(B) LOCATION: 1

(D) OTHER INFORMATION: /label= Dpr /note= 2,3-diaminopropionic is acetyl cysteine

(ix) FEATURE:

(A) NAME/KEY: Xaa

(B) LOCATION: 2

(D) OTHER INFORMATION: /label= Ahe

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/note= 2-amino heptanoic is butyl alanine

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

Xaa Xaa Glu Thr His Val Thr Gly Gly Ser Ala Gly His Thr Val Ser 10

Gly Phe Val Ser Leu Leu Ala Pro Gly Ala Lys Gln Asn Val Gln Leu 25

- (2) INFORMATION FOR SEQ ID NO:3:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 5 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

Val Ser Leu Leu Ala 1 5

- (2) INFORMATION FOR SEQ ID NO:4:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 7 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

Ser Leu Leu Ala Pro Gly Ala 1

(2) INFORMATION FOR SEQ ID NO:5:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 5 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

Leu Ala Pro Gly Ala 1 5

(2) INFORMATION FOR SEQ ID NO:6:

- (i) SEOUENCE CHARACTERISTICS:
 - (A) LENGTH: 7 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (ix) FEATURE:
 - (A) NAME/KEY: Xaa
 - (B) LOCATION: 7
 - (D) OTHER INFORMATION: /label= variable /note= "Represents Ala, Pro or Ser"
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

Ser Leu Leu Xaa Xaa Gly Xaa 1 5

- (2) INFORMATION FOR SEQ ID NO:7:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 7 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Xaa
- (B) LOCATION: 7
- (D) OTHER INFORMATION: /label= variable /note= "Represents Ala, Pro or Ser"
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

Ser Leu Phe Xaa Xaa Gly Xaa 1 5

(2) INFORMATION FOR SEQ ID NO:8:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Xaa
- (B) LOCATION: 1
- (D) OTHER INFORMATION: /label= variable /note= "Represents Ala, Ser, Glu, Gln, Gly, His, Thr, Asp, Arg, Lys, Asn, or Val"

(ix) FEATURE:

- (A) NAME/KEY: Xaa
- (B) LOCATION: 3
- (D) OTHER INFORMATION: /label= variable /note= "Represents Tyr, Gln, Arg, His, Thr, Asn, Ile, Leu, or Ser"

(ix) FEATURE:

- (A) NAME/KEY: Xaa
- (B) LOCATION: 8
- (D) OTHER INFORMATION: /label= variable /note= "Represents Ala, Gln, Val, Ile, Asn, Thr, Ser, Lys, Glu, Arq, or His"

(ix) FEATURE:

- (A) NAME/KEY: Xaa
- (B) LOCATION: 14
- (D) OTHER INFORMATION: /label= variable /note= "Represents Asn, Arg, His, Lys, Ala, Tyr, Ser, Phe, Leu, Gln, or Thr"

- (ix) FEATURE:
 - (A) NAME/KEY: Xaa
 - (B) LOCATION: 16
 - (D) OTHER INFORMATION: /label= variable /note= "Represents Phe, Val, Ile, or Leu"
- (ix) FEATURE:
 - (A) NAME/KEY: Xaa
 - (B) LOCATION: 17
 - (D) OTHER INFORMATION: /label= variable /note= "Represents Val, Ala, Thr, Ser, or Pro"
- (ix) FEATURE:
 - (A) NAME/KEY: Xaa
 - (B) LOCATION: 21
 - (D) OTHER INFORMATION: /label= variable /note= "Represents Arg, Ser, Gly, Thr, Asn, Met, Ala, Leu, Thr, Gln, Asp, Lys, or Glu"
- (ix) FEATURE:
 - (A) NAME/KEY: Xaa
 - (B) LOCATION: 22
 - (D) OTHER INFORMATION: /label= variable /note= "Represents Ser, Pro, Leu, Val, His, Arg, Tyr, Gln, Thr, or Ala"
- (ix) FEATURE:
 - (A) NAME/KEY: Xaa
 - (B) LOCATION: 24
 - (D) OTHER INFORMATION: /label= variable /note= "Represents Ala, Ser, or Pro"
- (ix) FEATURE:
 - (A) NAME/KEY: Xaa
 - (B) LOCATION: 27
 - (D) OTHER INFORMATION: /label= variable /note= "Asn, Asp, Lys, Arg, Thr, or Glu"
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

Xaa Thr Xaa Val Thr Gly Gly Xaa Ala Ala Arg Thr Thr Xaa Gly Xaa 1 5 10 15

Xaa Ser Leu Phe Xaa Xaa Gly Xaa Ser Gln Xaa Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:9:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids

- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

Ala Thr Tyr Ala Thr Gly Ala Ala Gln Gly His Ala Thr Asn Ser Phe 1 5 10 15

Val Ser Leu Phe Arg Ser Gly Ala Ser Gln Asn Leu Lys Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:10:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

Ser Thr Gln Val Thr Gly Gly Gln Ala Ala His Thr Val Arg Gly Val

Ala Ser Ile Phe Ser Pro Gly Ser Arg Gln Asp Ile Ser Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:11:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

Ser Thr Arg Val Thr Gly Gly Gln Gln Gly Arg Ala Val His Gly Ile 1 5 10 15

Ala Ser Leu Phe Ser Leu Gly Ala Ser Gln Lys Ile Gln Leu Val 20 25 30

(2) INFORMATION FOR SEQ ID NO:12:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

Ser Thr His Val Met Gly Ala Gln Gln Gly Arg Val Ala Lys Gly Phe 1 10 15

Thr Ser Leu Phe Gly Pro Gly Pro Ala Gln Lys Ile Gly Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:13:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

Ser Thr His Val Thr Gly Ala Val Gln Gly His Ser Ile Arg Gly Leu 1 5 10 15

Thr Ser Leu Phe Thr Ser Gly Pro Ala Gln Lys Ile Gln Leu Val 20 25 30

(2) INFORMATION FOR SEQ ID NO:14:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

Glu Thr His Val Thr Gly Gly Ile Ala Ala Lys Thr Thr Ala Ser Leu

1 5 10 15

Thr Gly Leu Phe Asn Leu Gly Ala Lys Gln Asn Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:15:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

Glu Thr His Val Thr Gly Gly Asn Ala Gly Arg Ala Ala Gly Ile 1 5 10 15

Ala Gly Leu Phe Thr Leu Gly Ala Lys Gln Asn Val Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:16:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:

Gln Thr Arg Val Thr Gly Gly Thr Ala Ala Gln Ser Thr Ala Arg Ile
1 10 15

Ala Gly Leu Phe Ser Leu Gly Ala Arg Gln Asn Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:17:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:

Gln Thr His Val Met Gly Gly Thr Ala Gly Arg Asn Ala Tyr Gly Leu 1 10 15

Thr Ser Phe Leu Ser Val Gly Ala Ser Gln Lys Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:18:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:

Glu Thr His Val Met Gly Gly Ala Ala Ser Ser Thr Thr Tyr Arg Phe 10 5

Ala Ser Leu Phe Thr Ser Gly Pro Ala Gln Lys Ile Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:19:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:

Glu Thr His Val Thr Gly Gly Ser Ala Ala Ser Thr Thr Ala Thr Phe 1 5

Ser Lys Leu Phe Met Pro Gly Ala Ser Gln Asn Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:20:
 - (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:

Gly Thr Thr Arg Val Gly Gly Ala Ala Ala Arg Thr Thr Ser Ser Phe 1 5 10 15

Ala Ser Leu Leu Thr His Gly Pro Ser Gln Asn Ile Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:21:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:

Gly Thr His Val Thr Gly Gly Ala Ala Ala Arg Asp Ala Phe Arg Phe 1 5 10 15

Ser Ser Leu Phe Thr Arg Gly Pro Ser Gln Asn Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:22:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:22:

Lys Leu

Ala Thr Asn Met Thr Gly Gly Ala Pro Ala A 30 Ile
1 5 10

Thr Thr Leu Phe Ser Tyr Gly Ala Ser



- (2) INFORMATION FOR SEQ ID NO:23:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:

His Asn His Val Thr Gly Gly Thr Ser Ala Arg Asn Thr Phe Gly Ile
1 10 15

Thr Thr Leu Phe Thr Gln Gly Pro Ser Gln Lys Leu Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:24:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:24:

Gly Thr His Val Thr Gly Gly Ala Ala Ala Arg Asn Ala His Ser Leu
1 10 15

Thr Ser Leu Leu Ala Pro Gly Ala Ser Gln Lys Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:25:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:25:

Thr Thr Arg Val Ser Gly Gly Thr Ala Ala His Thr Thr Ala Gly Leu

1 5 10 15

Thr Ser Leu Phe Ser Pro Gly Pro Arg Gln Asn Ile His Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:26:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:26:

Thr Thr His Val Ser Gly Gly Thr Ala Gly Arg Thr Thr Ala Ser Leu
1 10 15

Thr Ser Phe Phe Ala Pro Gly Ala Ser Gln Arg Ile Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:27:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:27:

Thr Thr His Val Thr Gly Gly Ala Thr Gly His Thr Thr Ser Gly Ile
1 10 15

Ala Ser Leu Phe Leu Pro Gly Ala Ser Gln Lys Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:28:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:28:

Asp Thr Tyr Ala Ser Gly Gly Ala Gln Gly Arg Ser Thr Leu Gly Phe 1 5 10 15

Thr Ser Leu Phe Thr Pro Gly Ala Ser Gln Lys Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:29:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:29:

Asp Thr Tyr Ala Ser Gly Gly Ala Ala Gly Arg Ala Thr Tyr Gly Ile
1 10 15

Thr Ser Leu Phe Ala Pro Gly Ala Ser Gln Asn Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:30:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:30:

Arg Thr Tyr Ala Ser Gly Gly Ala Ala Gly Arg Thr Thr His Gly Phe 1 5 10 15

Thr Ser Leu Phe Ser Thr Gly Ala Arg Gln Asn Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:31:
 - (i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 31 amino acids (B) TYPE: amino acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear (ii) MOLECULE TYPE: peptide (xi) SEQUENCE DESCRIPTION: SEQ ID NO:31: Gln Thr Tyr Val Thr Gly Gly Lys Ala Ala Gln Thr Val Ser Gly Phe Thr Gly Leu Phe Ser Ser Gly Pro Ser Gln Lys Ile Gln Leu Ile 25 (2) INFORMATION FOR SEQ ID NO:32: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 31 amino acids (B) TYPE: amino acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear (ii) MOLECULE TYPE: peptide (xi) SEQUENCE DESCRIPTION: SEQ ID NO:32: Asp Thr Tyr Val Ser Gly Gly Ala Ala Ala Arg Ser Ile Ser Gly Phe Thr Ser Leu Phe Thr Pro Gly Ala Ser Gln Lys Ile Gln Leu Val 20 (2) INFORMATION FOR SEQ ID NO:33: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 31 amino acids (B) TYPE: amino acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear (ii) MOLECULE TYPE: peptide (xi) SEQUENCE DESCRIPTION: SEQ ID NO:33: Ser Thr Tyr Val Thr Gly Gly Glu Ala Ser Arg Thr Thr Arg Gly Phe Ala Ser Leu Phe Thr Leu Gly Ser Ser Gln Lys Ile Gln Leu Ile

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(2) INFORMATION FOR SEQ ID NO:34: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 31 amino acids (B) TYPE: amino acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear (ii) MOLECULE TYPE: peptide (xi) SEQUENCE DESCRIPTION: SEQ ID NO:34: Asn Thr Tyr Val Thr Gly Gly Ser Ala Gly Arg Ala Val Ala Gly Phe 10 Ala Gly Leu Leu Gln Pro Gly Ala Lys Gln Asn Val Gln Leu Ile (2) INFORMATION FOR SEQ ID NO:35: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 31 amino acids (B) TYPE: amino acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear (ii) MOLECULE TYPE: peptide (xi) SEQUENCE DESCRIPTION: SEQ ID NO:35: His Thr Arg Val Thr Gly Gly Gln Val Ala Phe Arg Thr His Gly Leu 5 Val Ser Leu Phe Thr Gln Gly Pro Ser Gln Lys Ile Gln Leu Val 20 (2) INFORMATION FOR SEQ ID NO:36: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 31 amino acids (B) TYPE: amino acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear (ii) MOLECULE TYPE: peptide (xi) SEQUENCE DESCRIPTION: SEQ ID NO:36: His Thr His Val Thr Gly Gly Arg Val Ala Ser Ser Thr Gln Ser Leu - 59 -

1 5 10 15

Val Ser Trp Leu Ser Gln Gly Pro Ser Gln Lys Ile Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:37:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:37:

His Thr Arg Val Thr Gly Gly Val Gln Gly His Val Thr Ser Thr Leu 5 10 15

Thr Ser Leu Phe Arg Pro Gly Ala Ser Gln Lys Ile Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:38:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:38:

Asn Thr Arg Val Thr Gly Gly Val Gln Gly Arg Asp Thr Ser Gly Leu 5 10 15

Val Ser Leu Phe Ser Leu Gly Pro Ser Gln Lys Ile Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:39:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:39:

Asp Thr His Val Thr Gly Gly Ala Gln Ala Lys Thr Thr Asn Arg Leu 1 5 10 15

Val Ser Met Phe Ala Ser Gly Pro Ser Gln Lys Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:40:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:40:

Glu Thr His Val Thr Gly Gly Ala Ser Ala Arg Thr Thr Gln Arg Phe 1 5 10 15

Thr Ser Phe Phe Asp Leu Gly Pro Ser Gln Lys Ile Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:41:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:41:

Thr Thr Tyr Met Thr Gly Gly Ala Asn Ala Arg Thr Thr Gln Gly Phe 1 5 10 15

Val Ser Leu Phe Thr Pro Gly Pro Ala Gln Lys Ile Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:42:
 - (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:42:

Glu Thr His Val Thr Gly Gly Thr Ser Ala Arg Thr Thr Gln Gly Phe 1 5 10 15

Val Ser Leu Phe Ser Ala Gly Ala Ser Gln Lys Ile Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:43:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:43:

Gly Thr His Val Thr Gly Gly Gln Ala Ala Arg Thr Thr Gln Ser Phe 1 5 10 15

Thr Ser Leu Phe Ser Pro Gly Pro Gln Gln Lys Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:44:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:44:

Arg Thr His Val Thr Gly Gly Lys Ala Ala His Thr Thr Lys Gly Phe 1 5 10 15

Ala Ser Leu Phe Thr Pro Gly Pro Ser Gln Asn Ile Gln Leu Ile 20 25 30

(2) INFORMATION FOR SEQ ID NO:45:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:45:

Glu Thr Arg Val Thr Gly Ala Val Gln Gly His Gly Ala Leu Gly Leu
1 10 15

Ala Ser Leu Phe Thr Pro Gly Pro Ser Gln Lys Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:46:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:46:

Glu Thr Arg Val Thr Gly Ala Ile Ala Gly Arg Thr Ala Ser Ser Phe 1 5 10 15

Ala Gly Leu Phe Thr Ser Gly Ala Ser Gln Lys Ile Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:47:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:47:

Glu Thr Arg Val Thr Gly Gln Gln Val Gly Arg Thr Thr Gln Ser Leu

1 5 10 15

Thr Ser Leu Phe Thr Pro Gly Pro Ser Gln Thr Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:48:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:48:

Gln Thr Arg Val Thr Gly Ala Gln Val Gly Arg Thr Thr Ser Ser Leu

5 10 15

Thr Ser Leu Phe Thr Pro Gly Pro Ser Gln Asn Ile Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:49:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:49:

Arg Thr Gln Val Thr Gly Ala Gln Ala Gly His Thr Thr Ser Gly Leu

10 15

Ala Ser Leu Phe Thr Pro Gly Pro Ser Gln Lys Ile Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:50:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:50:

Glu Thr His Val Thr Gly Gly Ser Ala Gly His Thr Val Ser Gly Phe 1 5 10 15

Val Ser Leu Leu Ala Pro Gly Ala Lys Gln Asn Val Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:51:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:51:

Glu Thr His Val Thr Gly Gly Ser Ala Gly His Thr Val Thr Gly Ile
1 10 15

Ala Ser Leu Phe Thr Ser Gly Ala Lys Gln Asn Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:52:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:52:

Ser Thr His Val Thr Gly Gly Thr Ala Ala His Thr Val Ala Gly Phe 1 5 15

Ser Ser Leu Phe Thr Val Gly Pro Lys Gln Asn Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:53:
 - (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:53:

Glu Thr His Val Thr Gly Gly Ala Ala Ala Tyr Thr Ala Ala Gly Leu 1 5 10 15

Ala Ser Leu Phe Thr Ser Gly Ala Lys Gln Asn Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:54:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:54:

Glu Thr His Val Thr Gly Gly Ser Ala Gly Arg Thr Thr Ala Gly Leu

5 10 15

Val Gly Leu Leu Thr Pro Gly Ala Lys Gln Asn Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:55:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:55:

Gly Thr His Val Thr Gly Gly Ser Ala Gly Arg Ala Thr Ala Gly Ile 1 5 10 15

Ala Gly Leu Leu Thr Pro Gly Ala Arg Gln Asn Ile Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:56:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:56:

Lys Thr His Val Thr Gly Gly Ser Ala Ala Arg Thr Thr Ser Gly Ile 1 5 10 15

Ala Ser Leu Leu Thr Pro Gly Ala Lys Gln Asn Val Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:57:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:57:

Lys Thr Tyr Val Thr Gly Gly Ser Gln Ala Gln Ala Thr Phe Gly Phe 1 5 10 15

Thr Ser Leu Leu Gln Gln Gly Ala Lys Gln Asn Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:58:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:58:

Glu Thr Thr Val Thr Gly Gly Ser Ala Ala His Gly Ala Leu Gly Ile

1 5 10 15

Ala Ser Leu Phe Asn Gln Gly Ala Arg Gln Asn Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:59:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:59:

Glu Thr Tyr Val Thr Gly Gly Ala Ser Ala Arg Ser Thr Phe Thr Leu

5 10 15

Val Gly Leu Phe Lys Gln Gly Ser Gln Gln Asn Ile Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:60:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:60:

Gln Thr Tyr Val Ser Gly Gly Ser Ser Gly Arg Thr Thr Ser Gly Leu

5 10 15

Val Ser Ile Phe Ser Pro Gly Ala Ser Gln Asn Leu Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:61:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:61:

Glu Thr Tyr Val Ser Gly Gly Ala Ala Ala Gln Thr Thr Ala Arg Phe 1 5 10 15

Ala Gly Phe Phe Gln Ser Gly Ala Lys Gln Asn Ile Gln Leu Ile 20 25 30

(2) INFORMATION FOR SEQ ID NO:62:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (xi) SEQUENCE DESCRIPTION: SEO ID NO:62:

Glu Thr Tyr Val Ser Gly Gly Ser Ala Ala Gln Thr Thr Ala Gly Phe 1 5 10 15

Val Arg Leu Phe Glu Thr Gly Pro Lys Gln Asn Ile Gln Leu Ile 20 25 30

(2) INFORMATION FOR SEQ ID NO:63:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:63:

Ser Thr Tyr Val Ser Gly Gly Ala Gln Ala Arg Ala Gln Gly Ile

5 10 15

Thr Ser Leu Phe Ser Arg Gly Ser Ser Gln Lys Ile Gln Leu Val 20 25 30

(2) INFORMATION FOR SEQ ID NO:64:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:64:

Ser Thr Tyr Val Thr Gly Gly Thr Gln Gly Arg Ala Ala Ser Gly Leu
5 10 15

Thr Ser Leu Phe Ser Ala Gly Ala Ser Gln Asn Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:65:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:65:

Asn Thr Tyr Val Ser Gly Gly Thr Ala Gly His Thr Gly His Gly Leu 5 10 15

Thr Ala Leu Phe Ser Pro Gly Ala Ser Gln Asn Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:66:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:66:

Ser Thr Ile Val Ser Gly Gly Thr Val Ala Arg Thr Thr His Ser Leu 1 10 15

Ala Ser Leu Phe Thr Gln Gly Ala Ser Gln Lys Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEO ID NO:67:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:67:

Glu Thr Tyr Thr Ser Gly Gly Ala Ala Ser His Thr Thr Ser Thr Leu
1 10 15

Ala Ser Leu Phe Ser Pro Gly Ala Ser Gln Arg Ile Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:68:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:68:

His Thr Leu Thr Thr Gly Gly His Ala Ala Arg Leu Thr Ser Gly Phe 1 5 10 15

Ala Gly Leu Phe Thr Pro Gly Pro Ser Gln Arg Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:69:
 - (i) SEOUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:69:

Glu Thr Ile Val Ser Gly Gly Gln Ala Ala Arq Ala Met Ser Gly Leu

1

5

15

Val Ser Leu Phe Thr Pro Gly Ala Lys Gln Asn Ile Gln Leu Ile 20 25 30

10

- (2) INFORMATION FOR SEQ ID NO:70:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:70:

Glu Thr Tyr Thr Ser Gly Gly Asn Ala Gly His Thr Met Thr Gly Ile
1 5 10 15

Val Arg Phe Phe Ala Pro Gly Pro Lys Gln Asn Val His Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:71:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:71:

Thr Thr Tyr Thr Gly Gly Asn Ala Ala Arg Thr Thr Gln Ala Leu

10 15

Thr Ser Phe Phe Ser Pro Gly Ala Lys Gln Asp Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:72:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:72:

Glu Thr Tyr Thr Gly Gly Ser Thr Ala Arg Thr Thr Gln Gly Leu 1 5 10 15

Val Ser Leu Phe Ser Arg Gly Ala Lys Gln Asp Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:73:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:73:

Ala Thr Tyr Thr Ser Gly Gly Ser Ala Ala Arg Thr Thr Gln Gly Phe 1 5 10 15

Ala Ser Leu Phe Ser Leu Gly Ser Gln Gln Lys Ile Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:74:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:74:

Ala Thr Tyr Thr Gly Gly Ser Val Ala Arg Thr Thr His Gly Phe 1 5 10 15

Ser Ser Leu Phe Ser Gln Gly Ala Lys Gln Asn Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:75:
 - (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:75:

Val Thr Tyr Thr Gly Gly Ser Gln Ala Arg His Thr Gln Ser Val 1 5 10 15

Thr Ser Phe Phe Thr Gln Gly Pro Ala Gln Arg Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:76:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:76:

His Thr Tyr Thr Gly Gly Thr Val Ala Arg Ser Thr Gln Gly Leu
1 10 15

Val Gly Phe Leu Ser Pro Gly Pro Ser Gln Asn Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:77:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEO ID NO:77:

Thr Thr Tyr Val Ser Val Gly His Ala Ser Gln Thr Thr Arg Arg Val

Ala Ser Phe Phe Ser Pro Gly Ser Ala Gln Lys Ile Gln Leu Val 20 25 30 (2) INFORMATION FOR SEQ ID NO:78: (i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 31 amino acids

- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:78:

Thr Thr Thr Val Ser Gly Gly His Ala Ser Gln Ile Thr Arg Gly Val

Thr Ser Phe Phe Ser Pro Gly Ser Ala Gln Lys Ile Gln Leu Val

- (2) INFORMATION FOR SEQ ID NO:79:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:79:

Lys Thr Ser Leu Thr Gly Val Thr Arq Ala Arq Ala Ala Arg Leu 10

Thr Ala Leu Phe Ser Ser Gly Pro Ser Gln Arg Ile Gln Leu Ile 20

- (2) INFORMATION FOR SEQ ID NO:80:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:80:
 - Gly Thr Ser Leu Thr Gly Gly Ala Arg Ala Arg Ala Ser Gly Leu

- 75 -

1 5 10 15

Ala Gly Leu Phe Ser Ser Gly Pro Ser Gln Arg Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:81:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:81:

Val Thr Gln Val Ser Pro Pro Gln Ala Gly Tyr Thr Thr Ser Val Leu
1 10 15

Thr Gly Ile Leu Ser Pro Gly Ala Lys Gln Asn Ile Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:82:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:82:

Val Thr Gln Val Ser Gly Gly Gln Ala Gly Tyr Thr Thr Ser Val Leu

5 10 15

Thr Gly Ile Leu Ser Pro Gly Ala Lys Gln Asn Ile Gln Leu Val

- (2) INFORMATION FOR SEQ ID NO:83:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:83:

Gly Thr Tyr Thr Val Gly Gly Ala Ser Ala Phe Thr Thr Ser Arg Leu

5 10 15

Thr Ser Leu Phe Ala Leu Gly Pro Ser Gln Arg Ile Gln Leu Val 20 25 30

(2) INFORMATION FOR SEQ ID NO:84:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:84:

Asn Thr His Thr Val Gly Gly Thr Glu Gly Phe Ala Thr Gln Arg Leu 1 5 10 15

Thr Ser Leu Phe Ala Leu Gly Pro Ser Gln Lys Ile Gln Leu Ile 20 25 30

(2) INFORMATION FOR SEQ ID NO:85:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:85:

Ser Thr Arg Thr Ala Gly Gly Ala Gln Ala Phe Asn Thr Tyr Gly Val 1 5 10 15

Ala Ser Ile Phe Ser Pro Gly Pro Ser Gln Arg Ile Gln Leu Val 20 25 30

(2) INFORMATION FOR SEQ ID NO:86:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:86:

Gln Thr His Thr Val Gly Gly Ser Thr Ala His Asn Ala Arg Thr Leu
1 10 15

Thr Gly Met Phe Ser Leu Gly Ala Arg Gln Lys Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:87:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:87:

Asn Thr Arg Thr Val Ala Gly Ser Ala Ala Ala Thr Thr Arg Gly Phe 1 5 10 15

Thr Ser Met Phe Ser Ser Gly Ser Lys Gln Asn Leu Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:88:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:88:

Gln Thr Arg Thr Val Gly Gln Val Gly His Ser Val Arg Gly Phe
1 10 15

Thr Ser Leu Phe Ser Ala Gly Ser Ala Gln Asn Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:89:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:89:

Glu Thr His Thr Thr Gly Ala Val Ser Gly His Thr Thr Asn Val Leu
1 10 15

Thr Ser Leu Phe Ser Ser Gly Ser Ser Gln Asn Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:90:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:90:

Val Thr Arg Thr Thr Gly Glu Val Ala Ala Arg Thr Ala Asn Thr Phe 1 5 10 15

Ala Ser Leu Phe Thr Thr Gly Pro Ser Gln Asn Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:91:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:91:

Thr Thr Tyr Ser Ser Gly Gln Glu Ala Gly Arg Thr Val Ala Gly Phe

1

5

10

15

Ala Gly Leu Phe Thr Thr Gly Ala Lys Gln Asn Leu Tyr Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:92:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:92:

Ser Thr Ser Val Val Gly Gly Arg Gln Ala Ser Ala Thr Phe Arg Phe 1 5 10 15

Thr Ser Phe Phe Ser Arg Gly Pro Thr Gln Glu Ile Lys Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:93:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:93:

Asn Thr Tyr Thr Thr Ala Gly Ser Met Ala Gln Ser Ile Tyr Arg Leu

10 15

Thr Asp Ile Phe Ser Thr Gly Pro Ser Gln Lys Leu Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:94:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:94:

Arg Thr Ile Leu Met Ala Gly Arg Gln Ala Glu Val Thr Gln Ser Phe 1 5. 10 15

Pro Gly Leu Phe Ser Leu Ala Pro Ser Gln Lys Ile His Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:95:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:95:

Asp Thr Tyr Ala Thr Gly Gly Ser Val Ala Ser Ile Met Ala Gly Ile
1 10 15

Ala Arg Phe Phe Ser Pro Gly Ala Arg Gln Asp Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:96:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 30 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:96:

Glu Thr Tyr Ala Thr Gly Ala Ser Ala Gly His Asp Val Ser Ser Phe 1 10 15

Ala Arg Leu Phe Ala Pro Gly Ala Arg Gln Asn Ile Gln Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:97:
 - (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:97:

Glu Thr His Arg Thr Gly Gly Ser Ala Ala Arg Ser Thr Ala Gly Val 1 5 10 15

Ala Ser Leu Phe Thr Pro Gly Ala Arg Gln Asn Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:98:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:98:

Asn Thr Arg Ala Val Gly Met Val Gln Ser Arg Thr Thr Tyr Ala Leu
1 10 15

Thr Ser Leu Phe Asp Ser Gly Ala Ala Gln Lys Leu Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:99:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:99:

Glu Thr His Val Thr Gly Gly Ser Ala Gly Arg Thr Thr Ala Gly Leu

10 15

Val Gly Leu Leu Thr Pro Gly Ala Lys Gln Asn Ile Gln Leu Ile

- (2) INFORMATION FOR SEQ ID NO:100:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:100:

Glu Thr His Val Thr Gly Gly Ser Ala Gly Arg Ser Val Leu Gly Ile Ala
1 10 15

Ser Phe Leu Thr Arg Gly Pro Lys Gln Asn Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:101:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:101:

Glu Thr Tyr Thr Ser Gly Gly Ala Ala Ser His Thr Thr Ser Thr Leu

1 10 15

Ala Ser Leu Phe Ser Pro Gly Ala Ser Gln Arg Ile Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:102:
 - (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:102:

Ala Thr Tyr Thr Ser Gly Gly Val Ala Ser His Thr Thr Ser Arg Phe 1 5 10 15

Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Arg Ile Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:103:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:103:

Ala Thr Tyr Thr Ser Gly Ala Val Ala Ser His Thr Thr Ser Arg Phe 1 5 10 15

Thr Ser Phe Phe Ser Ser Gly Ala Ser Gln Arg Ile Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:104:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEO ID NO:104:

Ala Thr Tyr Thr Ser Gly Ala Val Ala Ser His Thr Thr Ser Arg Phe 1 5 10 15

Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Arg Ile Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:105:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:105:

Ala Thr Tyr Thr Ser Gly Ala Val Ala Ser His Thr Thr Ser Gly Phe 1 5 10 15

Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Arg Ile Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:106:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:106:

Glu Thr Tyr Thr Ser Gly Arg Val Ala Gly His Thr Thr Ser Gly Phe 1 5 10 15

Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Arg Ile Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:107:
 - (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:107:

Ala Thr Tyr Thr Ser Gly Gly Val Ala Gly Arg Thr Thr Ser Gly
1 10 15

Phe Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Lys Ile Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:108:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:108:

Glu Thr His Thr Thr Gly Arg Val Ala Gly His Thr Thr Ser Arg Phe 1 5 10 15

Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Lys Ile Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:109:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:109:

Glu Thr His Thr Thr Gly Arg Val Val Gly His Thr Thr Ser Gly
1 5 10 15

Phe Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Lys Ile Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:110:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:110:

Glu Thr His Thr Thr Gly Arg Val Ala Gly Arg Thr Thr Ser Gly Phe
1 10 15

Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Lys Ile Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:111:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:111:

Thr Thr Tyr Thr Ser Gly Gly Val Ala Gly Arg Thr Thr Ser Gly
1 5 10 15

Phe Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Lys Ile Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:112:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids

- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:112:

Lys Thr Tyr Thr Ser Gly Gly Ala Ala Ser His Thr Thr Ser Arg
5 10 15

Phe Thr Ser Leu Phe Ser Pro Gly Ala Ser Gln Arg Ile Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:113:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:113:

Ser Thr Arg Val Thr Gly Gly Gln Gln Gly Arg Ala Val His Gly Ile 1 5 10 15

Ala Ser Leu Phe Ser Leu Gly Ala Ser Gln Lys Ile Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:114:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:114:

Ser Thr Arg Val Thr Gly Gly Gln Gln Gly Arg Ala Val Gln Gly Phe 5 10 15

Ala Ser Leu Phe Arg Leu Gly Ala Ser Gln Glu Ile Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:115:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:115:

Ser Thr Arg Val Thr Gly Gly Gln Gln Gly Arg Ala Val His Gly Ile
1 10 15

Ala Ser Leu Phe Ser Leu Gly Ala Ser Gln Lys Asn Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:116:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:116:

Ser Thr Arg Val Thr Gly Gly Gln Gln Gly His Ala Ala His Ser Leu

1 10 15

Thr Ser Leu Phe Arg Leu Gly Ala Ser Gln Asn Ile Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:117:
 - (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (xi) SEQUENCE DESCRIPTION: SEO ID NO:117:

Asn Thr Arg Val Thr Gly Gly Arg Gln Gly Arg Ala Ala His Ser Leu
1 10 15

Thr Ser Leu Phe Ser Pro Gly Ala Ser Gln Asn Ile Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:118:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:118:

Gly Thr Arg Val Thr Gly Gly Arg Gln Gly Arg Ala Ala His Ser Leu 1 5 10 15

Thr Ser Leu Phe Ser Pro Gly Ala Ser Glu Asn Ile Arg Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:119:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:119:

Ser Thr Arg Val Ser Gly Gly Gln Gln Gly Arg Ala Ala His Ser Leu 1 5 10 15

Thr Ser Leu Phe Thr Leu Gly Ala Ser Gln Asn Ile Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:120:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:120:

Ser Thr His Val Thr Gly Ala Leu Gln Gly Arg Ala Ala Tyr Gly Ile 1 5 10 15

Thr Ser Phe Leu Ser His Gly Pro Ser Gln Lys Ile Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:121:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:121:

Ser Thr Gln Val Met Gly Gly Gln Gln Gly Arg Ala Ala Tyr Ser Leu 1 5 10 15

Ala Ser Leu Leu Ser Pro Gly Ala Asn Gln Lys Ile Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:122:
 - (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:122:

Ser Thr Gln Val Met Gly Gly Gln Gln Gly Arg Ala Ala Tyr Ser Leu 1 5 10 15

Ala Ser Leu Leu Gly Pro Gly Ala Ser Gln Lys Ile Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:123:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:123:

Ser Thr Gln Val Met Gly Gly Gln Gln Gly Arg Ala Ala Tyr Ser Leu 1 5 10 15

Ala Ser Leu Leu Ser Pro Gly Ala Ser Gln Lys Ile Gln Leu Val 20 25 30

- (2) INFORMATION FOR SEQ ID NO:124:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:124:

Arg Thr Arg Thr Val Gly Gln Val Gly His Ser Val Arg Gly Phe 1 5 10 15

Thr Ser Leu Phe Ser Ala Gly Ser Ala Gln Asn Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:125:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:125:

Gln Thr Arg Thr Val Gly Gln Val Gly His Ser Val Arg Gly Phe
1 5 10 15

Thr Ser Leu Phe Ser Ala Gly Ser Ala Gln Asn Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:126:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:126:

Gln Thr Arg Thr Val Gly Gln Val Gly His Ser Val Arg Gly Phe
1 10 15

Thr Ser Leu Phe Ser Ala Gly Ser Ala Gln Asp Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:127:
 - (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:127:

Gln Thr Arg Thr Val Gly Gln Val Gly His Ser Val Arg Gly Phe
5 10 15

Thr Ser Leu Leu Ser Ala Gly Ser Ala Gln Asn Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:128:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:128:

Gln Thr Arg Thr Val Gly Gln Val Gly His Ser Val Arg Gly Leu
5 10 15

Thr Ser Leu Phe Ser Ala Gly Ser Ala Gln Asn Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:129:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:129:

Gln Thr Arg Thr Val Gly Gln Met Gly His Gly Val Arg Gly Leu
1 10 15

Thr Ser Leu Phe Ser Ala Gly Ser Ala Arg Asn Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:130:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:130:

Gln Thr His Thr Val Gly Gln Met Gly His Gly Val Arg Gly Leu

1 10 15

Thr Ser Leu Phe Ser Ala Gly Ser Ala Gln Asn Ile Gln Leu Ile 20 25 30

- (2) INFORMATION FOR SEQ ID NO:131:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:131:

Gln Thr His Thr Val Gly Gln Met Gly His Gly Val Arg Gly Leu
1 10 15

Thr Asn Leu Phe Ser Ala Gly Ser Ala Gln Asn Ile Gln Leu Ile 20 25 30

(2) INFORMATION FOR SEQ ID NO:132:

(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 24 amino acids (B) TYPE: amino acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear (ii) MOLECULE TYPE: peptide (xi) SEQUENCE DESCRIPTION: SEQ ID NO:132: Glu Thr His Val Thr Gly Gly Ser Ala Gly His Thr Val Ser Gly Phe Val Ser Leu Leu Ala Pro Gly Ala 20 (2) INFORMATION FOR SEQ ID NO:133: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 31 amino acids (B) TYPE: amino acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear (ii) MOLECULE TYPE: peptide (ix) FEATURE: (A) NAME/KEY: Xaa (B) LOCATION: 1 (D) OTHER INFORMATION: /label=Ahe /note=2-amino heptanoic is butyl alanine (xi) SEQUENCE DESCRIPTION: SEQ ID NO:133: Xaa Glu Thr His Val Thr Gly Gly Ser Ala Gly His Thr Val Ser Gly Phe Val Ser Leu Leu Ala Pro Gly Ala Lys Gln Asn Val Gln Leu (2) INFORMATION FOR SEQ ID NO:134: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 6 amino acids (B) TYPE: amino acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear - 96 -

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:134:

1

Ser Leu Phe Xaa Xaa Gly 1 5